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New records of small mammals from Jordan

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Abstract. Small mammals recently obtained from Jordan include several species new for the fauna of the country. These comprise the bat *Eptesicus bottae* (Peters, 1869) (Chiroptera: Vespertilionidae) and two rodents, *Mus spretus* Lataste, 1883 and *Rattus norvegicus* (Berkenhout, 1769) (Rodentia: Muridae).

Key words. Mammalia, Vespertilionidae, *Eptesicus bottae*, Muridae, *Mus spretus*, *Rattus norvegicus*, Jordan, new records.

On the recent Harrison Zoological Museum expedition to Jordan, several pellets of the Eagle Owl (*Bubo bubo*) were recovered from a rocky ledge, on the North Bank of the Wadi Zerqa, Jordan (appr. 32.12'N 35.49'E) on 19 October, 1988. On examination these pellets were found to contain a large number of mammal specimens as well as the remains of small birds, lizards, beetles and a crab. The owl was identified by means of an associated left tail feather found at the site and by the large size of the pellets. Eight mammal species were subsequently identified.

The most favoured mammalian prey of the Eagle Owl appeared to be the East European Hedgehog (*Erinaceus concolor*), of which there were 26 cranial fragments, representing a minimum number of eight individuals. Six of these eight *E. concolor* were subadults or juveniles with milk dentition or with cheekteeth not completely erupted. However, two were adults, one of which, represented by the almost complete skull, was an old adult with well worn teeth (and with a pathological infection of skull vault, with sinuses penetrating both frontals). It is not known whether the high percentage of immature specimens within the pellets reflects their relative abundance in the field or their relative inexperience in escaping from predators or a conscious preference on the part of the owl. It is however a fine example of how natural selection favours the predation of the young and the sick.

The Eagle Owl also preyed on the Long-eared Hedgehog (*Hemiechinus auritus*) of which three skull fragments, probably representing a single adult individual, were recovered. Little is known of this species of hedgehog in Jordan, although Atallah (1977) did include records from Jerash and Amman, both within 30 km of the Wadi Zerqa. Of the rodents, the most notable species present in the pellets was *Cricetulus migratorius*. Two left and two right mandibles were recovered. These represent only the second record of the Grey Hamster from Jordan which was unknown from the country until 1981 when a specimen was collected at Gawa in the basalt deserts of north-east Jordan (Searight, 1987). Previously Bate (1945) had noted the predation of this species by owls in Lebanon and Pradel (1981) in Syria. The maxilla with complete dentition and left and right mandibles of *Rattus norvegicus* represent the first record of the Brown Rat from Jordan, excluding the West Bank.

Meriones tristrami was the most common rodent species, with at least three individuals found within the pellets. Also present were the remains of a juvenile *Spalax*

leucodon; the left mandible of a *Mus* sp. and part of the left mandible of a very immature Hare (*Lepus capensis*).

Curiously our own trap yields in the area adjacent to the Eagle Owl's lair produced a very different return. In the traps, the most common species were *Mus spretus* and *Mus musculus*; in addition *Acomys cahirinus* and *Crocidura suaveolens* were also captured. All four species are either absent or in the case of *Mus* barely represented in the Owl's catch, despite the fact that *Acomys* was found within the lair itself. This tends to suggest that the Eagle Owl's hunting range extended considerably further than the immediate confines of the Wadi Zerqa. It also shows that owl pellets are a most useful additional source of data in small mammal surveys.

Mus spretus Lataste, 1883 has not previously been noted from Jordan since the presence of a short-tailed mouse in the region has only recently been recognized (Auffray et al., in press). Auffray et al. originally referred to the taxon as *Mus "spretoides"*. Subsequently Auffray followed the view of Marshall & Sage (1981) and referred to it as *M. abbotti* Waterhouse, 1837 (Auffray in litt., 1989). However, since the taxon *"spretoides"* is apparently a *nomen dubium* and since the holotype of *abbotti* is a juvenile and is most similar to *M. musculus*, neither name has been accepted here for the Jordanian mice. They clearly belong to the group of short-tailed, wild living mice that occur around the Mediterranean basin. The oldest taxon for this group is *M. spicilegus* Petenyi, 1882. However, the zygomatic structure of the cotypes of this form does not compare favourably with the Jordanian specimens which are here provisionally referred to *M. spretus*. The holotype of this taxon from Algeria appears most similar to them, in respect of cranial characters and tail length. *M. spretus* as here understood, in Jordan, is distinguished from *M. musculus* on account of its relatively short tail, averaging 44.7 % (S.D. = 2.3) of total length in the 9 specimens caught in the Wadi Zerqa whilst the comparable figure for the ten *M. musculus* specimens was 47.8 % (S.D. = 2.1). The skulls of the two species are essentially similar except that in *M. spretus* the anterior part of the malar process is relatively broad in comparison to the width of the antero-lateral part of the zygomatic arch. In *M. musculus* the opposite is true. In addition to the *M. spretus* trapped in the Wadi Zerqa a further specimen of this mouse was collected 1 km east of Anjarah, near Ajlun (32.30'N 35.47'E). It is clear from the above discussion that the taxonomic status of this short-tailed mouse in the Middle East requires further study, especially in relation to *Mus spicilegus*, which could prove to be the prior name for this group.

Another interesting result of the expedition was the first record of *Eptesicus bottae* (Peters, 1869) for Jordan. Two specimens (HZM.21.19566 & 22.19567), here referred to the race *E. b. innesi* (Lataste, 1887), were netted over a small pool near Lawrence's Pool, near Rum (29.33'N 35.28'E). Standard measurements in mm of the two specimens respectively were as follows: total length: 98, 92; tail: 34, 36; hind foot: 6.2, 6.2; forearm: 42.0, 43.0; ear: 13.1, 15.1; greatest skull length: 16.3, 16.4; condylobasal length: 15.6, 15.8; zygomatic breadth: 10.9, —, breadth of braincase: 7.7, 7.5; postorbital constriction: 3.7, 3.7; maxillary cheekteeth (C—M3): 5.8, 5.7; mandibular cheekteeth (c—m3): 6.4, 6.3; mandible: 12.2, 12.4. A specimen of *Otonycteris hemprichi* Peters, 1859 netted over the same pool is only the second record of this species from Jordan. It was previously known by three specimens from the vicinity of Azraq

Oasis (Atallah, 1977). This specimen from Rum, like those from Azraq are referred to the Arabian Desert race *O. h. jin* (Cheesman & Hinton, 1924). Standard measurements of this, a non-pregnant female (HZM15.19565), are as follows: total length: 135; tail: 53; hind foot: 12.2; forearm: 64.2; ear: 40.8; greatest skull length: 23.6; condylobasal length: 21.9; zygomatic breadth: 14.3; breadth of braincase: 10.3; postorbital constriction: 4.2; maxillary cheekteeth (C—M3): 8.0; mandibular cheekteeth (c—m3): 9.2; mandible: 16.8.

Conclusions

The records cited above resulting from the recent expedition to Jordan of the Harrison Zoological Museum add three species to the faunal list of the country and add to the distributional knowledge of several others. The value of examination of owl pellets for faunal survey work is clearly shown. Attention is drawn to the confused state of taxonomy of the short-tailed *Mus "spretoides"* of the Eastern Mediterranean region, here provisionally referred to *Mus spretus*.

Zusammenfassung

Es wird über neue Kleinsäugerfunde aus Jordan berichtet. Die Fledermaus *Eptesicus bottae* und die Nager *Mus spretus* und *Rattus norvegicus* werden erstmals für das Land nachgewiesen, und die Taxonomie der Hausmäuse der *Mus spicilegus-/Mus spretus*-Gruppe in Vorderasien wird diskutiert.

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References

Atallah, S. I. (1977): Mammals of the Eastern Mediterranean Region; their Ecology, Systematics and Zoogeographical relationships. — Säugetierkundl. Mitt., 24: 241—320.

Auffray, J. C., E. Tchernov, F. Bonhomme, G. Heth, S. Simson & E. Nevo (in press): Presence and ecological distribution of *Mus "spretoides"* and *Mus musculus domesticus* in Israel. Circum-Mediterranean vicariance in the genus *Mus*. — Z. Säugetierkunde.

Bate, D. M. A. (1945): Notes on small mammals from the Lebanon Mountains, Syria. — Ann. nat. Hist. (11) 12: 141—158.

Berkenhout, J. (1769): Outlines of the natural history of Great Britain and Ireland. Vol. 1, i—xiii, 233 pp.

Cheesman, R. E. & M. A. C. Hinton (1924): On the Mammals collected in the desert of Central Arabia by Major R. E. Cheesman. — Ann. Mag. nat. Hist. (9) 14: 548—558.

Lataste, F. (1883): Note sur le souris d'Algerie et description d'une espece nouvelle (*Mus spretus*). — Acta Linn. Soc. Bordeaux iv. (7): 13—33.

— (1887): Description d'une nouvelle espece de chiroptere d'Egypte. — Ann. Mus. Stor. Nat. Genova 24: 625—630.

Marshall, J. T. & R. D. Sage (1981): Taxonomy of the house mouse. — Symp. Zool. Soc., London, 47: 15—25.

Petenyi, S. J. (1882): Reliquae Petenyianae. — Termeszetrajzi Fuzetek, Budapest, 5: 91—146.

Peters, W. (1859): Neue Beiträge zur Kenntnis der Chiropteren. — Mber. Preuss. Akad. Wiss.: 222—225.

— (1869): Bemerkungen über neue oder weniger bekannte Flederthiere, besonders des Pariser Museums. — Mber. Preuss. Akad. Wiss.: 391—408.

Pradel, A. (1981): Biometrical remarks on the hamster *Cricetulus migratorius* (Pallas 1773) (Rodentia, Mammalia) from Krak des Chevaliers (Syria). — Acta zool. Cracov. 25 (11): 271—292.

Searight, A. (1987): Some records of Mammals from North-east Jordan. — pp. 311—317 in: Krupp, F., W. Schneider & R. Kinzelbach. Proceedings of the Symposium on the Fauna and Zoogeography of the Middle East.

Waterhouse, G. R. (1837): Characters of some new species of the genera *Mus* and *Phascogale*. — Proc. Zool. Soc. Lond.: 75—78.

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